



# AWARENESS ABOUT MENSTRUATION AND MENSTRUAL HYGIENE PRACTICES AMONG ADOLESCENT GIRLS IN CENTRAL INDIA

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## ABSTRACT

**Background:** Menstruation is a natural phenomenon unique to women and menstrual hygiene is fundamental to the wellbeing of women and girls.

**Objectives:** To find the awareness about menstruation among adolescent girls in a government and private school and ascertain their menstrual hygiene practices.

**Methods:** A cross sectional study was done on 100 girls between age of 12-16 years studying in a government school and a private school, after taking consent from the authority in charge. A self-administered, semi-structured, pre-tested questionnaire was used to find out Socio Demographic profile, Knowledge of menstruation and Practices during menstruation. Chi square test with Yates correction was applied.

**Results:** Mother was the first informant regarding menstruation in case of 70% of girls with 54% in government school and 86% girls in private school. For genital cleaning purpose 44% girls used both soap and water with 60% girls from government school and 28% from private school and 56% girls used plain water. Sanitary pads were used among 98% girls out of which 38% girls used the absorbent material for 6-12 hours in which 50% belonged to private school and 16% belonged to government school.

**Conclusion:** Awareness was higher and better menstrual hygiene was seen in the private school as compared to government school.

**Keywords:** Menstrual hygiene; awareness, sanitary pad

## INTRODUCTION

Adolescence is a period of transition from childhood to adulthood. It is the period of life between ages of 10-19 years<sup>1</sup>. Adolescence in girls is a turbulent period, which includes stressful events like menarche, considered as a landmark of female puberty<sup>2</sup>. Menstruation is a natural phenomenon among adolescent females who experience shedding of blood for 1 week every month from the age of maturity until menopause<sup>3</sup>. The first menstruation (menarche) occurs between 11 and 15 years with a mean of 13 years<sup>4</sup>.

Adolescent girls constitute a vulnerable group, particularly in India where female child is ne-

glected one. The manner in which a girl learns about menstruation and its associated changes may have an impact process; it is linked with several misconceptions and inadequate practices, which sometimes result into adverse health outcomes<sup>5</sup>. Isolation of the menstruating girls and restrictions being imposed on them in the family, have reinforced a negative attitude towards this phenomenon<sup>6</sup>. Lack of preparedness prior to the onset of menarche adds to the turmoil. Reaction to menstruation seems to profoundly affect their psychological development and the quality of response to womanhood in general. In many pockets of India, even the mere mention of the word has been a taboo in the past in many a locale and con-

tinues to be so, even to this day, despite the advancement in varied areas of life and health care<sup>7</sup>.

In India, as per School Education Statistics the Gross Enrolment Ratio (GER) at classes I-V (6-11 years) is 107.1 for girls, it falls to 81.4 in classes VI-VIII (11-14 years)<sup>8</sup>. A contributory factor has been the lack of adequate toilet facilities at schools, lack of access to modern menstrual hygiene products and reluctance of parents to send adolescent girls to school on account of menstrual health issues<sup>9</sup>. Menstrual hygiene and management will directly contribute to MDG-2 on universal education, MDG-3 on gender equality and women empowerment<sup>10</sup>. Hygiene related practices of women during menstruation are of considerable importance, especially in terms of increased vulnerability to reproductive tract infections (RTI)<sup>11</sup>. Women having better knowledge regarding menstrual hygiene and safe practices are less vulnerable to RTI and its consequences<sup>12</sup>. The present study was conducted, among adolescent school girls in a government and private school to study the level of awareness about menstruation and assess their menstrual hygiene practices in the district of Indore followed by comparison of the two schools, to attain a baseline level and retrospectively analyse the nature of the current information and practices in order to suggest appropriate changes.

## MATERIAL AND METHODS

A cross sectional study was done during October 2014 to January 2015 in an Indore city of Madhya Pradesh, after taking due approvals from the parent institute. Adolescent girls between the ages of 12-16 years were included in the study. A total of 100 adolescent girls were selected using simple random sampling technique 50 each from a government and private school, using the formula =  $4 \cdot (z_{\alpha})^2 \cdot (p) \cdot (1-p) / d^2$ . After making a complete list of government and private schools, the selection of schools was done on the basis of chit withdrawal. A list of students enrolled in 8<sup>th</sup> and 9<sup>th</sup> Standard was obtained from the selected schools and study population was selected using a random number table. A semi-structured, pre-tested questionnaire was used as a study tool. The questionnaire was prepared in English, translated into Hindi and back-translated to English. The English and Hindi questionnaire was self-administered to the private and government school respectively after due approval from the parents. The questionnaire had questions relating to Socio Demographic profile, Knowledge of menstruation and Practices during menstruation. Data was analysed using Microsoft office excel and SPSS version 22. Chi-square test with Yate's Correction was applied. P value less than 0.05 was considered as statistically significant.

## OBSERVATION AND RESULT

Out of the total population, maximum (85%) number of girls belonged to 14-15 years of age group. In our study, 50% of the population belongs to a private school and 50% of the population belongs to a government school. Age of menarche ranged from 11-15 years, with a mean of 12 years overall with 12 years and 13 years in private and government school respectively. Majority of the girls (86%) knew about menstruation before it occurred and the chief source of this information were mothers (70%) followed by friends (11%) and self (10%).

Table 1 shows information and perceptions of the adolescent girls regarding menstruation. Out of the total population, majority (70%) of girls got the information from their mother. Informant is mother in 54% girls of government school and 86% of private school { $p = 0.002356$ }. Majority of girl (71%) had complete information about menstruation with a variation in true formation of 54% and 88% in government and private schools respectively and 29% had incomplete information { $p < 0.00001$ }. Majority of girls (89%) responded that menstruation is a normal process. Majority of girls (60%) correctly responded with uterus as the source of blood during menstruation whereas 40% girls had incorrect views regarding the source of blood during menstruation. Majority of girls (93%) held the view that sanitary pads were to be used as absorbent during menstruation whereas 2% believed that a cloth piece was enough and 5% said both.

Table 2 shows practices of the adolescent girls during menstruation. Out of the total population, 98% girls used with sanitary pads. In the matter of frequency of changing the absorbent material, 45% (government: 6% and private: 84%) girls changed the absorbent twice a day and 10% (government: 14% and private: 6%) changed the absorbent thrice a day whereas 45% (government: 80% and private: 10%) girls changed the absorbent depending on bleeding { $p < 0.00001$ }. On being asked the duration for which the absorbent was kept in place, 35% (government: 24% and private: 46%) girls used the absorbent material for less than 6 hours, 38% (government: 26% and private: 50%) girls used the absorbent material for 6-12 hours and 38% (government: 50% and private: 4%) girls used the absorbent material for 12-24 hours { $p < 0.00001$ }. Regarding local cleansing, 56% (government: 40% and private: 72%) girls used plain water and 44% (government: 60% and private: 28%) girls used soap water. Regarding other restrictions (Religious occasion, Marriage, School, Playing, Holy place visit, Household work, other) followed- 81% girls practiced whereas 19% did not.

**Table 1 -Information and Perceptions regarding Menstruation**

Question	T* (n=100)	G** (n=50)	P*** (n=50)	p-Value
<b>Informant about menarche:</b>				<b>0.00048</b>
Mother	70(70%)	27(54%)	43(86%)	
Other(Elder Sister, Friend, Relative, No one/Self)	30(30%)	23(46%)	7(14%)	
<b>Integrity of Information:</b>				<b>&lt; 0.00001</b>
Complete information	71(71%)	27(54%)	44(88%)	
Incomplete Information	19(19%)	19(38%)	0(0%)	
No information	10(10%)	4(8%)	6(12%)	
<b>Cause of menstrual cycle:</b>				<b>0.35031</b>
Normal process	89(89%)	42(84%)	47(94%)	
Curse of god	1(1%)	1(2%)	0(0%)	
Disease	1(1%)	1(2%)	0(0%)	
Don't Know	9(9%)	6(12%)	3(6%)	
<b>Source of Blood:</b>				<b>0.067855</b>
Uterus	60(60%)	30(60%)	30(60%)	
Other (Vagina, Cervix etc.)	17(17%)	5(10%)	12(24%)	
Don't Know	23(23%)	15(30%)	8(16%)	
<b>Stand on menstruation:</b>				<b>0.054427</b>
Any disease	1(1%)	1(2%)	0(0%)	
No utility	11(11%)	4(8%)	7(14%)	
Involves Reproduction	76(76%)	35(70%)	41(82%)	
Don't know	12(12%)	10(20%)	2(4%)	
<b>Stand on absorbent to be used:</b>				<b>0.130758</b>
Any cloth piece	2(2%)	2(4%)	0(0%)	
Sanitary pads	93(93%)	44(88%)	49(98%)	
Both of above	5(5%)	4(8%)	1(2%)	

\*T=Total; \*\*G=Government School; \*\*\*P=Private School. | p<0.05=significant

**Table 2: Practices during menstruation**

Question	T* (n=100)	G** (n=50)	P*** (n=50)	p-Value
<b>Materials used during menstruation:</b>				
Sanitary pads	98(98%)	48(96%)	50(100%)	<b>0.1531</b>
New cloth at each time of menses	0(0%)	0(0%)	0(0%)	
Old cloth rewashed and reused	2(2%)	2(4%)	0(0%)	
Any/ All of the above	0(0%)	0(0%)	0(0%)	
<b>Frequency of changing absorbent:</b>				
Twice a day	45(45%)	3(6%)	42(84%)	<b>&lt; 0.001</b>
Thrice a day	10(10%)	7(14%)	3(6%)	
Depends on bleeding	45(45%)	40(80%)	5(10%)	
<b>Duration of use of absorbent material:</b>				
Less than 6 hours	25(25%)	12(24%)	23(46%)	<b>&lt; 0.001</b>
6-12 hours	38(38%)	13(26%)	25(50%)	
12-24 hours	27(27%)	25(50%)	2(4%)	
<b>Cleansing of genital area:</b>				<b>0.0012</b>
Water	56(56%)	20(40%)	36(72%)	
Soap Water	44(44%)	30(60%)	14(28%)	
<b>Frequency of bathing:</b>				
Once a day	93(93%)	46(92%)	47(94%)	<b>0.3310</b>
Twice a day	5(5%)	2(4%)	3(6%)	
Don't take a bath	2(2%)	2(4%)	0(0%)	
<b>Diet restrictions during menstruation:</b>				<b>0.249</b>
Practiced	86(86%)	45(90%)	41(82%)	
Not Practiced	14(14%)	5(10%)	9(18%)	
<b>Other restrictions (Religious, School, Play, etc.)</b>				
Practiced	81(81%)	42(84%)	39(78%)	<b>0.4444</b>
Not Practiced	19(19%)	8(16%)	11(22%)	
<b>Nutrition during menses:</b>				
My diet is decreases during menses	42(42%)	27(54%)	15(30%)	<b>0.0002</b>
My diet is equal to the regular diet as any day other than menses	42(42%)	11(22%)	31(62%)	
I take additional nutrition during menses	16(16%)	12(24%)	4(8%)	

\*T=Total; \*\*G=Government School; \*\*\*P=Private School. | p<0.05=significant

**Table 3 -Additional aspects enquired**

Question	T* (n=100)	G** (n=50)	P*** (n=50)	p-Value
<b>Clinical Visits for problems:</b>				<b>0.0573</b>
I don't have any problem	65(65%)	27(54%)	38(76%)	
Have had problem but not visited a clinic	12(12%)	7(14%)	5(10%)	
Once or more	23(46%)	16(32%)	7(14%)	
<b>Need of supplementation during menstruation:</b>				<b>0.6814</b>
Yes	65(65%)	33(66%)	32(64%)	
No	18(18%)	10(20%)	8(16%)	
Don't know	17(17%)	7(14%)	10(20%)	

\*T=Total; \*\*G=Government School; \*\*\*P=Private School; p<0.05=significant

Table 3 shows additional aspects enquired with respect to menstrual health. Out of the total population, the clinical visits made to seek solutions to problems caused due to menses were observed as follows 65% had no problems. Out of the total population 56% girls study subjects had regular menstrual cycle and 75% girls experienced problems during menstruation out of which 66% belonged to private school and 84% belonged to government school. Pain was the major feature among 67% girls.

## DISCUSSION

A total of 100 adolescent girls between 12-16 years of age, 50 in a government and 50 in a private school were interviewed. The mean age of menarche was found to be 12.

In the information, knowledge and perception aspect our study found that mother was the prime informant among 70% girls. In studies conducted in West Bengal<sup>13</sup>, Pondicherry<sup>9</sup>, West Bengal (by Paria)<sup>14</sup>, Nagpur<sup>15</sup> and Wardha<sup>16</sup> it was observed that mother was the informant in 37.5%, 66%, 76.8%, 71.3% and 40.67% of girls respectively. However an opposite picture was seen in a study conducted among schoolgirls in Egypt<sup>17</sup> by El-Gilany which reported that mass media was the main source of information. Also a similar study conducted in Uttarakhand<sup>18</sup> showed that friends were the main source of information (31.8%).

Out of total population, 89% girls had the perception that menstruation is a physiological process. In a study conducted in West Bengal<sup>13</sup> it was reported that 86.25% girls had the same perception regarding menstruation. 93% correctly knew that sanitary pad was to be used during menstruation whereas a study in West Bengal<sup>13</sup> and Pondicherry<sup>9</sup> shows only 48.75% and 88% of girls knew the same respectively. Out of the total population, 60% girls had the correct idea that the source of blood during menstruation was uterus whereas only 38% girls thought the same as revealed in the study conducted in Pondicherry<sup>9</sup>. However, in our study 40% girls had wrong perception as to the source of

blood being from the vagina, cervix, other organs etc. in comparison to 28% girls as revealed in study conducted in Pondicherry<sup>9</sup>. This study's observations reflect good educational status of mothers along with the active role of health education and awareness programmes in school to improve the status of adolescent health. However, there still seems to be a break in the continuity of knowledge given to the adolescent girls<sup>19, 20, 21</sup>.

In the practices aspect, in our study 98% used sanitary pads during menstruation whereas a study conducted in West Bengal<sup>13</sup>, Pondicherry<sup>9</sup> and Uttarakhand<sup>20</sup> shows only 11.25%, 94.8% and 34.8% of girls used sanitary pads respectively. In contrast, three-fourth of the girls in Rajasthan<sup>21</sup> were using old cloth during periods and one-fifth (19.5%) were using sanitary pads. Out of the 2% who were using old cloth, majority (93%) were drying it in sunshine, only 7% girls accepted drying it in the shade or some hidden place. In a similar study conducted in Uttarakhand<sup>20</sup> it was found that 88.1% were drying it in sunshine, only 11.9% girls accepted drying it in the shade or some hidden place. Our study showed that 25% girls used the absorbent material for less than 6 hours and 38% girls used the absorbent material for 6-12 hours. In a study conducted in Maharashtra<sup>21</sup> 2.37% changed pad every 6 hours. In our study, 98% girls took a bath at least once a day whereas in a study conducted in Uttarakhand<sup>17</sup> only 64% were bathing daily. For cleaning their genital area, 44% used soap water whereas 97.5% used soap water as per a study conducted in West Bengal<sup>13</sup>. In a similar study conducted among schoolgirls in Egypt<sup>16</sup>, the different aspects of personal hygiene were generally found to be poor; such as not changing pads regularly or at night, and not bathing during menstruation with lack of privacy being an important problem. In our study a good overall picture was seen regarding practices, however better hygienic practices such frequent change of sanitary pads and proper adequate washing of the genital area with plain water are essential during menstruation. In addition to fulfilling the need of sanitary pad, girls need to be educated on the proper use of sanitary pads to protect their health<sup>23</sup>.

In the aspect of restrictions followed, 81% girls had some sort of restriction (Religious occasion, Marriage, School, Playing, Holy place visit, Household work, other) during menstruation whereas 2 studies conducted in West Bengal<sup>9,14</sup> showed 85% and 80.3% girls had a similar restriction during menstruation. In a similar study conducted in Nagpur it was showed that 73.64% girls practiced various restrictions. Out of the total population, 86% girls practiced restrictions to eating compared to 50% in a study conducted in West Bengal<sup>13</sup>. This study's observation still reflects the age old practices in different cultures and taboos in the society regarding menstruation which need to be reformed in order to empower the girl child. This will free her from restriction and encourage active participation in daily activities<sup>9, 23</sup>.

Out of the total population clinical visits made to seek solutions to problems caused due to menses were observed as follows- 65% had no problems, 12% had problems but made no visits, 12% had problems and made atleast one visit, 5% had problems and made atleast 2 visits and 6% had problems had made atleast 3 visits. Pain was the major feature among 67% girls. In a study conducted in Wardha<sup>16</sup> and Jammu<sup>24</sup> it was observed that 67% and 63.7% respectively had similar complains. This study shows that despite curbing the issue of low awareness there is still a prevalent problem of menstruation as a medical problem presenting as pains, cramps or headaches which need to be effectively tackled by prescribing pain-relieving medicines. This will help the child in being prepared for her periods and carry out her daily responsibilities. Sometimes pain may be indicative of dysmenorrhoea or other menstrual disorders which need a more aggressive management plan.

## CONCLUSION

In our setting, we observed that the education of girl child pertaining to the basic knowledge of menstruation and practices during menstruation should be more emphasised in government schools. Among the girls of the government school proper rapport between the mother and the girl child should be encouraged nonetheless this gap can be bridge with mass media through its better information, education and communication (IEC) capabilities as well as acceptance. Our study emphasises that merely providing a girl child with sanitary pad is not enough to the curb the problem of menstrual hygiene inadequacy and should be advised on proper frequency of changing sanitary pads and cleansing of genital area. Hence girls should be thoroughly educated on the issue of menstrual health and menstrual hygiene through

focused group discussion in school amongst peers. In our study, majority of girls suggested nutritional supplements during menstruation which should be provided either at home or in the school through a planned program. This study reinforces the need to empower the girl child by avoid her restrictions and remove their false beliefs to further improve the overall picture of menstrual health.

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